

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) ~~Parallel~~ A parallel confocal laser microscopy system comprising:
 - an array of vertical-cavity lasers (VCSEL) for emitting light beams, and
 - an optical means for focusing the light beams onto an object to be observed,~~characterized in that~~ wherein a photodetector is arranged on one face of each VCSEL laser such that ~~this~~ the photodetector is capable of receiving a light beam originating from said object via a cavity of the VCSEL laser cavity, ~~this~~ the cavity having an opening used as a filtering hole.
2. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that~~ wherein the photodetector is arranged on a face opposite to the cavity opening of the VCSEL laser.
3. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that it~~ moreover comprises further comprising a scanning means for carrying out laser scanning so as to produce an image.
4. (Currently Amended) ~~System~~ The system according to claim 3 [[1]], ~~characterized in that it~~ moreover comprises further comprising a controlling means for controlling the scanning means so as to carry out an acquisition of images in real time.
5. (Currently Amended) ~~System~~ The system according to claim 3, ~~characterized in that~~ wherein the scanning means comprise MEMS microsystems.

6. (Currently Amended) ~~System~~ The system according to claim 3, ~~characterized in that~~ wherein the scanning means comprise piezoelectric positioners.
7. (Currently Amended) ~~System~~ The system according to claim 3, ~~characterized in that~~ wherein the scanning means are capable of moving the VCSEL laser array.
8. (Currently Amended) ~~System~~ The system according to claim 3, ~~characterized in that~~ wherein the scanning means ~~of scanning~~ are capable of moving the optical means.
9. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that~~ wherein the optical means are capable of directing each light beam originating from the object to be observed towards the cavity of a VCSEL laser.
10. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that it~~ moreover comprises further comprising a modulation means for modulating the light beams emitted from the array.
11. (Currently Amended) ~~System~~ The system according to claim 10 ~~in which~~ wherein the light beams originating from the object to be observed are modulated, ~~characterized in that it~~ comprises the system further comprising a synchronous detection means for extracting a useful signal from ~~the~~ an electrical signal generated by each photodetector.
12. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that~~ wherein the optical means comprise at least one mobile lens for allowing image acquisition at different depths of the object to be observed.

13. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that~~ wherein the optical means comprise at least one variable curvature lens for allowing image acquisition at different depths of the object to be observed.
14. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that it comprises~~ further comprising a means for axially moving the array so as to carry out image acquisition at different depths of the object to be observed.
15. (Currently Amended) ~~System~~ The system according to claim 1, ~~characterized in that it~~ wherein the system consists of a miniature head in the form of a housing.
16. (Currently Amended) ~~Application of the~~ The system according to claim 15 ~~in which~~ wherein the miniature head is arranged at the end of an endoscope.
17. (Currently Amended) ~~Method~~ A method of parallel confocal laser microscopy ~~in which~~ comprising:
emitting a plurality of light beams ~~are emitted~~ from an array of VCSEL vertical cavity lasers[[,]]; focusing the ~~these~~ light beams ~~are focused~~ on an object to be observed; ~~characterized in that and~~ receiving, by a photodetector [[is]] arranged on a face of each VCSEL laser, ~~so as to receive~~ a light beam originating from the object ~~on this photodetector~~ via a cavity of the VCSEL laser cavity, ~~and in that the~~ wherein an opening of ~~this the~~ cavity is used as a filtering hole for the light beam originating from the object.

18. (Currently Amended) ~~Method~~ The method according to claim 17, ~~characterized in that~~ wherein laser scanning is carried out so as to produce an image.
19. (Currently Amended) ~~Method~~ The method according to claim 17, ~~characterized in that~~ wherein laser scanning is carried out so as to acquire images in real time.
20. (Currently Amended) ~~Method~~ The method according to claim 18, ~~characterized in that~~ wherein the laser scanning is carried out by moving an optical means used to focus the light beams.
21. (Currently Amended) ~~Method~~ The method according to claim 18, ~~characterized in that~~ wherein the laser scanning is carried out by moving the array.
22. (Currently Amended) ~~Method~~ The method according to claim 18, ~~characterized in that~~ wherein MEMS-type micro-systems are used for carrying out the laser scanning.
23. (Currently Amended) ~~Method~~ The method according to claim 18, ~~characterized in that~~ wherein piezoelectric positioners are used for carrying out the laser scanning.
24. (Currently Amended) ~~Method~~ The method according to claim 17, ~~characterized in that~~ wherein the light beams emitted from the array are modulated and synchronous detection is carried out at the level of the photodetector.